Dr. Paul A. Lessing

Extensive experience in developing ceramics and other materials for high-temperature uses, in solid oxide fuel cell development and in creating new materials to solve energy-related problems.

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Education
Dr. Paul Lessing received his bachelor's degree in Ceramic Engineering in 1971 and his Ph.D. in Materials Science and Engineering in 1975, both from the University of Utah.

Experience and Achievements
Dr. Lessing has worked at Los Alamos National Lab (Space Nuclear Systems), MERDI in Butte Montana (Fuel Cells & MHD materials), Ceramatec (structural ceramics, fuel cells and high-temperature batteries), New Mexico Tech (associate professor, research on ceramics and fuel cells), INL (materials for energy conversion systems, high-temperature reactor materials, spent fuel, solid oxide fuel cells, high temperature hydrogen generation from steam electrolysis, and hydrogen membranes).

Dr. Lessing initiated the first research program on planar solid oxide fuel cells while at Ceramatec in 1984 (this area is now subject of research and development throughout the world). He was recipient of the Most Original Technical Work of 2002 Award from Bechtel National. He also invented the DUAGG and DUCRETE (depleted uranium aggregate and concrete, respectively -- both Trademarked by INL) technologies that were licensed. He likes to invent new material configurations and fabrication techniques that can be applied to solve energy related problems in the United States. Dr. Lessing gains satisfaction from getting a new idea and then working with his colleagues to bring it to fruition. He also enjoys working with young people, teaching them and helping them to grow and become professional scientists and engineers.

INL'S LIFETIME ACHIEVEMENT AWARD FOR INVENTORSHIP

Patents

- U.S. Patent 5,427,747 - Method and Apparatus for Producing Oxygenates from Hydorcarbons
- U.S. Patent 5,459,767 - Method for Testing the Strength and Structural Integrity of Nuclear Fuels Particles
- U.S. Patent 5,464,583 - Method for Manufacturing Whisker Preforms and Composites
- U.S. Patent 5,496,655 - Catalytic Bipolar Interconnection Plate for Use in a Fuel Cell
- U.S. Patent 5,641,585 - Miniature Ceramic Fuel Cell
- U.S. Patent 5,786,611 - Radiation Shielding Composition
- U.S. Patent 6,120,706 - Process for Producing an Aggregate Suitable for Includsion into a Radiation Shielding Product
- U.S. Patent 6,166,390 - Radiation Shilding Composition
- U.S. Patent 6,787,007 - Polymeric Hydrogen Diffusion Barrier, High-Pressure Storage Tank so Equipped, Method of Fabricating a Storage Tank and Method of Preventing Hydrogen Diffusion
- U.S. Patent 7,033,551 - Apparatus and Methods for Direct Conversion of Gaseous Hydrocarbons to Liquids